PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: HO, Peter et al.
Serial No.: 09/743,621
Filed: April 9, 2001
For: OPTICAL DEVICES

Examiner: Paul R. Michl
Art Unit: 1714
Confirmation No. 6126

Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF PETER HO
IN SUPPORT OF PETITION UNDER 37 C.F.R. § 1.114

Sir/Madam:

I, Peter Ho, hereby declare:

1. I am Research Fellow of St John's College (Cambridge, U.K.) with a Ph.D. in Physics (University of Cambridge, U.K.) in the field of Semiconductive Polymers and Devices. I have also been active in the field of Colloid Science since 1997.

2. This declaration is being submitted in support of the above-identified application and pursuant to 37 C.F.R. § 1.114.

3. That I have reviewed the final office action dated July 9, 2002 and the prior art cited therein, and that I have reviewed the response filed on December 6, 2002 on behalf of the applicant.

4. That "nanoparticles" is a term commonly used in the field of colloid science to mean particles of very small size, typically in the range of 1–100 nm across.

Common table sugar and salt typically has dimensions of around 0.5 – 1 mm. Such particles would therefore not be described as nanoparticles. Although it is not inconceivable that salt and sugar particles may be of the order of nanometers in dimension, such small particles are not what a person would understand as common table sugar or salt, and a person skilled in the art would not describe these particles as nanoparticles.

5. In my experience, it is common for skilled persons to refer to a liquid containing nanoparticles in a non-aggregated state as a "a dispersion of nanoparticles" but also to sometimes use the analogous term "a solution of nanoparticles".

6. When a nanoparticle is in a solution of nanoparticles, the nanoparticle retains the same physical structure as when it is not in such a solution. In other words, the nanoparticles are merely disaggregated by the solvent. Conversely, when a sugar particle dissolves in water, the inter-molecular bonds that are responsible for the particle's crystal structure break down so the sugar is dissolved in the water as free sugar molecules. Thus after solution the sugar particle no longer exists in the same form. Furthermore, dissolved sugar molecules or salt ions are smaller than the accepted size range of nanoparticles. Therefore, dissolved molecules of sugar or dissolved ions of salt in water do not constitute nanoparticles.

I, Peter Ho, hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Signature_____ Date: 13 May 2003

Name: Peter Ho

Title: Research Fellow, St John's College